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Here is now and there is the sound of the land: scientific and sonic perceptions of the African Sahel

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Abstract

This paper reflects on *Groundbreaking: Extreme Landscapes in Grains and Pixels*, a real-time generative sound/video installation commissioned from the authors by the UK Research Councils in 2007¹. The work interrogates visual and sonic representations of soil studies to reveal interactions and tensions between extreme environments and cultural experiences, between norms of scientific understanding and contemporary sound/art practices. In doing so, the work offers a critique of scientific hierarchies; its assertions, assumptions and attendant aphorisms. Although challenges to established hierarchies are deeply embedded in science's own history - Francis Bacon's *Novum Organum* still questions today's domains² - it suggests a continuing resonance within debates about risk in the future directions of science. Such a resonance is re-evaluated through processes of deduction, which links scientific assertion with societal comment, and also of abstraction, which links scientific modes of representation with artistic values of communication, visualisation and sonification³.

People who live in geographically and socially marginalised areas of the world, vulnerable to climate change, provide a compelling impetus and context for this investigation. The African Sahel is one such area; bounded and contrasting the desertified extremes of the Sahara with the needs of nomadic pastoralists and of settled agrarian peoples. Established scientific routes provide a means towards deductive understandings of the interaction between the environment and society at both a regional- and local-scale; how people use (and have used) the landscape

¹ Presented at National Museum of Scotland, Edinburgh, March 2007. Supported by Research Councils UK, NSW2007 Award.

² Bacon, F. (1620) *Novum Organum*; The Oxford Francis Bacon (2004) Volume XI, The Instauration Magna Part II: *Novum Organum* and Associated Texts, ed. Rees, G., Oxford, Oxford University Press.

³ Blackwell, T. and Young, M. (2004) *Self-Organised Music*. *Organised Sound* 9:2, 123–36

to support their daily lives, how landscapes are managed to achieve this, and how such landscapes influence the development of society⁴.

Repeated snapshots of the Sahel region promote one understanding, at least within subject domains entrained in sequences of similar studies: they may suggest how adaptive strategies can be developed for the future of this region. Instead, we can break out of this entrenchment, investigating new forms of dialogue that examine and abstract atypical physical scales of human-landscape interaction. Evidence of human activities may be preserved in the sediments of an extreme landscape⁵, and by examining these we can gain an understanding of the nature and intensity of past human-landscape interactions in an extreme context, and a trajectory for the future.

This paper aims to further the comprehension of such interactions, reaching across barriers presented by different temporal and spatial scales: between natural landscape and the production of artefacts, between manufacture and the scientific analysis of the provenance of artefacts, between the perception of visual and sonified representations, and crucially, between micro-scale information and macro-scale evidence of extreme climatic change. In doing so, and with reference to the authors' installation work, novel understandings are elicited regarding the nature, scale and quality of the interfaces present.

⁴ Adderley, W.P., Simpson, I.A., Kirscht, H., Adam, M., Spencer, J.Q., and Sanderson, D.C.W. (2004) Enhancing ethno-pedology: integrated approaches to Kanuri and Shuwa Arab definitions in the Kala-Balge region, North East Nigeria. *Catena* 58, 41-64.

⁵ Adderley, W.P., Simpson, I.A. and Davidson, D.A. (2006) Historic landscape management: a validation of quantitative soil thin section analyses. *Journal of Archaeological Science* 33, 320-334.

Short Biographies

Paul Adderley is a soil scientist with interests in geoarchaeology and environmental history. He holds a RCUK Academic Fellowship at the University of Stirling, Scotland, and specialises in research surrounding the sustainability of societies in marginal, or extreme, environments such as Greenland and the African Sahel; he lectures on topics surrounding environmental risk. Recent studies have centred on developing understandings of long-term societal-climatic interactions.

Michael Young is a composer with interests in computer music and interactive media. He lectures at Goldsmiths, University of London and is cofounder of the Live Algorithms for Music network (www.livealgorithms.org). Recent compositions include Aur(or)a, a generative system for solo instrument and computer (2006) and Argrophylax (2005) for oboe and live electronics. He has created a number of gallery installations, most recently John Goto's New World Circus (2006). www.myoungmusic.com